

**Nonlinear Relationship between Economic Growth and Nuances of Globalization with  
Income Stratification: Roles of Financial Development and Governance**

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**Abstract.** We study the effect of overall globalization on economic growth in a neoclassical macroeconomic growth model. We further assess our model by considering the decomposed measures of globalization including economic, political and social globalization components. To this end, we estimate panel data models by applying the Cross-Sectional Dependency-Autoregressive Distributed Lags (CS-ARDL) approach [as well as the two step System GMM method under the collapse option](#) for a sample of 116 countries during the available time period 1980–2015. We classified our sample into upper middle, lower middle and high-income groups to minimize country specific heterogeneity. Our results affirm the presence of a quadratic (non-linear) U-shaped relationship between the overall globalization (including the economic, political, social components) and economic growth for the lower middle and upper middle-income group. However, they provide evidence of a positive linear relationship between globalization and economic growth for the high-income countries. Given the arguments that the impact of globalization on growth is conditional with local financial development (FD) and quality of governance (QoG) hence we incorporate their role. We provide a fresh evidence that the impacts of globalization on economic growth are more profound in the countries with a higher QoG and a higher deepening of FD. We further check robustness of our analysis applying U-test and dynamic GMM approach. We finally provide several policy implications.

**Keywords:** Globalization; Growth; Financial Development; Governance; CS-ARDL; [System GMM with Collapse Option](#).

**JEL Code:** O4, O5, F1, F55, C50.

## 1. Introduction

In a closed growth model, the impacts on economic growth are confined to domestic factors of production. However, living in an era of increasing globalization, other factors that are also representing the domestic financial sector and globalization components matter significantly because the world's economies have become more connected as a result of breaking barriers, expanding movements of cross border capital and financial integration. Our stand on measuring the impact of globalization on economic growth by incorporating the role of decomposed components of globalization, income level, financial development (FD) and quality of governance (QoG) is motivated by a few strands of opinion.

*First*, prior literature on growth-globalization nexus appears to be contrasting. The first stream of literature highlights the positive role of globalization towards economic growth through the channel of trade liberalization, promoting competition, expediting economies of scale, encouraging macroeconomic stability, fostering foreign direct investment and technology diffusion<sup>1</sup>. In addition, liberalization of international capital markets as another potential factor for globalization to exert positive benefits on growth for developing countries (Obstfeld, 1998). In this connection, we mention several anecdotal instances of positive consequences of globalization for the middle income and transitional economies which have experienced higher economic growth via trade liberalization and financial integration. For instance, since the late 1990s European transitional economies enjoyed economic gains than other developing countries through trade, financial integration and trade liberalizations.

Nevertheless, Stiglitz (2002) argues that the impact of globalization is conditional on the readiness of any country to grab the opportunity of the force of globalization to foster its

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<sup>1</sup> Das, 2005, Bhagwati, 2004; Friedrich et al., 2013; Armstrong & Read, 1995, 1998.

economic growth. In this regard, several seminal works argue that globalization can have profound impact in accelerating economic growth in the presence of a threshold level of institutional quality, symmetric information in the financial markets and a desirable composition of capital inflows in capital-importing countries (Stiglitz, 2000; Arestis et. al., 2005; Wei, 2006; Hall & Jones, 1999). However, the scarcity of empirical studies validating those propositions aforementioned in these seminal works motivates us to consider the role of QoG and FD as factors for affecting the outcome of globalization on growth.

*Second*, we emphasize that the distributional consequences of globalization are different as the country-specific impact of globalization may depend on the absorbing capacity of the respective economies. For instance, several Latin American countries experienced substantial increments in inequality during trade liberalization in the 1980s and the 1990s, which is similar to the experiences of India, China, and Hong Kong (Wood and Ridao-Cano, 1999; Wei and Wu, 2002). Conversely, several Southeast Asian countries, namely, South Korea, Taiwan and Singapore underwent colossal trade policy reforms after removing trade barriers in the 1960s and the 1970s, which laid the cornerstone of their successive economic growth episodes in the later decades (Wood and Ridao-Cano, 1999). However, the prior literature focuses on the adverse effects of global financial crises on the real sectors and the inequality-exacerbating impact of globalization on countries facing unparalleled amounts of debt which is considered as a factor aggravating the distributional conflicts (Aryeetsy & Ackah, 2011; Singh, 2003; Milanovic, 2003; Wood, 1998; Feenstra, 1998; Cornwall & Cornwall, 2001). This backdrop clearly highlights that the impact of globalization follow a heterogeneous or country specific natures. Thus, we resolve the ongoing debate by pointing out that the growth-globalization nexus depends on the income classification as experienced by several countries.

*Third*, a strand of the literature also argues that the influence of globalization on economic development is conditional on the level of financial development (*FD*). Globalization creates new market opportunities for many countries by pooling out markets. To exploit those opportunities, the local economies require lumpy capital investment, hence *FD* plays an important mediating role in the globalization-growth nexus. The most obvious way through which financial markets development can extend the benefits of globalization is through the *FDI* channel by raising savings and investment decisions and augmenting the transfer of capital to its effective uses<sup>2</sup>. Despite a plausible role of *FD* in the globalization-growth nexus, strands of the prior literature ignored to contextualize it. Hence, we are motivated to undertake this study to overcome the shortcomings in the existing literature by contextualizing the possible channels including the *FD* while scrutinizing the globalization–economic growth nexus.

*Finally*, the impact of globalization on growth is subject to the quality of governance in domestic economies. Whether a country acclimates to the wave of globalization which is defined as the sense of exposure to the Western world (Hall and Jones, 1999), depends on the local institutional compatibility and good governance. For instance, historical inheritance of comparatively better domestic institutional settings in Southeast Asian countries has led to a significant level of economic integration between these regions with the rest of the world. In contrary, most of the Middle-Eastern, MENA, or central Asian countries appeared to be reluctant to catch up with forces of globalization which could have been translated to a potential higher economic growth.

*QoG* captures the quality dimension of governments, therefore, we include it in an extended neoclassical production function as it is expected to influence economic growth. In addition,

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<sup>2</sup>Hermes and Lensink, 2003; Carkovic and Levine, 2005; Kose et al.,2008; King and Levine, 1993; Levine, 2005; Demirguc-Kunt and Levine,1996; Batten and Vo 2009

QoG improves democracy, hamstring corruption and even help markets work more efficiently, which in turn spurs economic growth (Rivera-Batiz, 20002). However, such an obvious role of QoG has been neglected in the prior literature, hence we argue that the domestic institutional settings can make a difference in the impact of globalization on economic growth. Thus, we believe, the current study significantly contributes to the exiting literature by considering the QoG as an important preconditioned factor for the globalization process to have successful impacts on the growth process of our sample countries.

We demonstrate our contributions by filling up the gap in the existing literature of development economics in several ways. *First*, we cover a wide range of sample countries and categorized them according to their income stratification over a relatively substantial period of time to ensure the robustness of our analysis. *Second*, we have captured the time-varying dimension of globalization in driving economic growth by using a dynamic approach. *Third*, we have employed the econometric methodology of the CS-ARDL model which in our opinion is the most appropriate to capture cross-sectional dependency, potential simultaneity, spatial spillover and omitted common factor bias among a large sample of middle and high-income countries and 35 years of time series. This method properly addresses the time-varying, cross-sectional dynamics of the panels over time. *Fourth*, we have included both the three decomposed globalization components and the quality of governances as well as financial development as additional factors of economic growth, which is not common in the standard literature.

The novelty of our research demonstrates that the different classifications of globalization to include economic, social and political components with economic growth share a U-shaped relationship after accounting for cross-sectional dependency both in the long run (LR) and the short run (SR) among the developing countries. The long run captures theoretical economic

relationships, while the short run arrests random effects. We further extend and complement our analysis by asserting that globalization and economic growth follow a positive linear relationship in high-income countries. We provide a justification of having a robust finding for which the cross-sectional dependency should be addressed both in the SR and LR, which is highly relevant in capturing the overlapping impacts of the growth-globalization nexus among the sample countries and is notably ignored in the previous literature. We propose that developed countries with a higher financial development (FD) continue to underscore a positive relationship between globalization and economic growth, while developing countries with a lower FD share initially a negative relation initially, but after a threshold point, they share a positive relationship due to more financial deepening. The findings of our study also suggest that high governance countries can incorporate the benefits of more globalization to stimulate the growth process, while the low governance countries fail to realize the benefits globalization.

The remainder of this study is outlined as follows. Section 2 presents a review of the literature and the development of the hypotheses. Section 3 discusses the methodology and the estimation procedure. Section 4 provides the estimation and the discussion of the results. Section 5 presents the robustness tests, and Section 6 concludes the paper.

## **2. Literature Review and Hypothesis Development**

We review the relevant literature by dividing it into four strands and then develop a hypothesis under each strand which we will formerly examine to fulfill the objectives of this study.

### *2.1 Globalization and Economic Growth*

Prior literature argues that the impact of globalization on economic growth is conditional on the level of readiness of a country, financial market development, governance and so on.

Proponents reveal that globalization spurs economic growth in the presence of a threshold level of institutional quality, symmetric information in the financial markets and a desirable composition of capital inflows in capital-importing countries (Stiglitz, 2000; Arestis et. al., 2005; Wei 2006; Hall & Jones, 1999). Furthermore, Stiglitz (2002) underscores that the existing level of development, timing, the succession of the countries consequently, the readiness of the individuals can determine the degree of the impact and the distributive effects of globalization. However, several African economies were adversely affected by the GFC in 2008 due to their global financial and trade integration (Aryeetsy & Ackah, 2011). In contrast, middle income and transitional economies have experienced higher economic growth via trade liberalization and financial integration. For instance, European transitional economies have gained more economically than other developing countries through trade, financial integration and trade liberalizations since the late 1990s. In addition to this, these economies have received a considerable amount of remittances, technological progress and a greater access to foreign markets. For example, the adoption of in-migration policies to alleviate the supply of domestic labor constraints helped to spur growth in small island developing states (SIDS) within Western Europe (Friedrich et al., 2013). In addition, the MIRAB (migration, remittances, aid and bureaucracy) economies receive a significant amount of workers' remittances in exchange for migrant labor has significantly enhance their growth process (Armstrong & Read, 1995, 1998). Thus, we argue that a conditional role of globalization explaining economic growth enables us to formulate the following hypothesis.

*“H1: (Economic, political and social) globalization and economic growth follow a non-monotonic (quadratic) relationship.”*

## *2.2 Globalization and Growth: Regional Differences*



The principle benefit of globalization originates from a comparative advantage, which enables a country to produce goods or services at a lower opportunity cost than other countries do. The globalization process enhances global economic development, whereas the country-specific impact of globalization might be different, depending on the absorbing capacity of the globalization process. Interestingly, the distributional consequences of globalization are unsatisfactory and contrasting with the traditional perception for the unskilled and semi-skilled workers of developing countries. These workers are believed to be inferior to the highly trained and educated workers of developed countries (Goldberg & Pavcnik, 2007). Wood and Ridao-Cano (1999) contend that several Latin American countries have experienced substantial increments in inequality during trade liberalization in the 1980s and the 1990s, which is similar to India, China, and Hong Kong's experiences. Similarly, Wei and Wu (2002) share China's negative experience of increasing income inequality along with the exposure to globalization during the 1980s and the 1990s.

These experiences are congruent with the extensive review by Branstetter and Lardy (2006) of the Chinese liberalization process of trade and FDI, which eventually and successively incorporated the economy in WTO in 2001. By contrast, several Southeast Asian countries, namely, South Korea, Taiwan, Hong Kong, and Singapore massively reformed their trade policies by removing trade barriers in the 1960s and the 1970s (Wood and Ridao-Cano, 1999). This backdrop provides an important insight regarding the diverse effects of globalization on economic growth across countries and over time. Therefore, we formulate our second hypothesis.

*“H2: The role of globalization on economic growth is sensitive to the level of income.”*

### *2.3 Globalization and Growth: Role of Financial Development (FD)*

The prior literature argues that the impact of globalization on growth is conditional on the level of financial market development in the domestic economies (Eichengreen, 2001; Klein, 2005; Alfaro et al., 2004). The globalization process positively influences domestic economic growth through developing the financial markets and institutions, financial integration, capital accumulation and trade liberalization (Mauro, 1995; Olson et al., 2000; North, 1990; Rosenberg and Birdzell, 1985; King and Levine, 1993a; Rajan and Zingales, 1998). Additionally, the international level of financial globalization can effectively maximize capital (Hermes and Lensink, 2003; Carkovic & Levine, 2005; Kose et al., 2008; King & Levine, 1993b; Levine & Zervos, 1998; Beck et al., 1999; Demircuc-Kunt & Levine, 1996; Levine, 2005; Federici & Carioli, 2009; Kose et al., 2010; Ang, 2008). Other literature suggests that the development in financial markets and institutions, financial integration, capital accumulation, and trade liberalization is the prime factor through which the globalization process influences domestic economic growth (Mauro 1995; Olson et al., 2000; North, 1990; Rosenberg and Birdzell, 1985; King and Levine, 1993a; Rajan and Zingales, 1998).

Financial globalization can even lower the cost of productive investments by allowing foreign capital to have access to domestic financial markets and increase the amount of obtainable foreign capital (Mishkin, 2006). Globalization even enhances the incentives of certain firms to improve corporate governance through external finance by solving the agency problem caused by the reduction of the cost of outside finances (Stulz, 2005). In addition, Klein (2005) affirms that upper middle-income countries receive maximum benefits from having a strong correlation between capital account liberalization and per capita income, which is conditional on the quality of governance (QoG). Thus, we assume that the magnitude of the effect of globalization on growth also depends on the level of financial development.

*“H3: The impact of globalization on economic growth is sensitive to the level of financial development.”*

#### *2.4 Globalization and Growth: Role of Governance*

Prior literature argues that whether a national economy should involve or prevent the forces of globalization depends on the institutional setup of a country (Simmons & Elkins, 2004). Several studies have traced the biased origins of economic and financial policies and discovered a strong connection between the rent-seeking attitude of developing countries and the exposure to the outer world (Simmons, 1994; Alesina, et al., 1994; Leblang, 1997). Furthermore, these findings were assisted by theories regarding the proclivity of domestic leaders for globalization (Frieden, 1991; Rogowski, 1989). In line with this argument, we assume that the poor governance of any country can prevent it from gaining the benefit of globalization through curbing the public policy transfer, policy diffusion, policy convergence and institutional isomorphism. The anecdotal facts confirm that North Korea, which is commonly referred to as the “Hermit Kingdom,” has a poor institutional quality and avoids bilateral and multilateral diplomatic relationships with the rest of the world.

Prior literature argues that economic globalization reduces the incentive for authoritarian leaders to cling to power (Diamond, 1994), pushes authoritarian states to decentralize power (Li and Reuveny, 2003), and promotes domestic institutions (Risse et al., 1999; Boli and Thomas, 1999). Alternatively, economic globalization is a critical factor in attaining an open, enlightened and mature society. However, we argue that the difference in the level of economic globalization between two countries is primarily caused by domestic institutional settings. For example, countries in Southeast Asia, which historically inherit relatively stronger domestic institutional

settings than those of most Middle-Eastern, MENA, or central Asian countries, have witnessed a higher level of economic integration within the regions and with the rest of the world.

Certainly, the harmonization or convergence of institutional settings constitutes an inevitable condition for economic globalization (Hart & Prakash, 2003). Moreover, Fisman and Gatti (2002) substantiate that the fiscal decentralization of government expenditures is strongly linked with the low levels of corruption. Therefore, the increased centralization of economic management is a signal of a high level of corruption, and the resulting low level of QoG impedes economic growth. A better quality of governance can also attract more foreign investment because it strengthens property rights and curtails corruption, which is important for improved growth performance of countries. Furthermore, Hall and Jones (1999) present robust findings on the positive effects of good governance on growth, which significantly supplements the effect of physical capital accumulation. The authors argue that the extent to which a country was exposed to Western influence plays a crucial role in the country's ability to design proper institutions for good governance. Thus, we assume that the influence of globalization on economic growth is conditional on the level of QoG.

*“H4: The role of globalization in driving economic growth is sensitive to the level of governance”*

### **3. Methodology**

#### *3.1 Data and Variables*

Using a sample of 116 middle income (split into lower middle and upper middle) and high-income countries, we investigate the effect of globalization on GDP per capita in constant 2010 dollars for the period 1980 to 2015. We exclude low income countries due to the unavailability of the data. Also, it is assumed that the benefit of globalization is yet to be permeated to these

countries. For example, Afghanistan, Benin, Burkina Faso, North Korea, and so on are lagging behind to be able to cope with the process of globalization. We use three measures of globalization including economic (*LEGI*), social (*LSGI*) and political globalization (*LPGI*) (see Appendix B for more detailed information) to investigate the globalization-economic growth relationship, given the control variables. We consider the core components of the neo-classical growth model such as the fixed capital formation share of GDP (FCF) as a proxy for capital, and the total labor force (*LLF*) as a proxy for effective labor. We also consider the financial development (*FD*) share of GDP as a core component due to its plausible role in driving economic development. Finally, we re-estimate the dynamic impact of globalization by controlling for quality of governance (QoG) through splitting sample countries according to low QoG and high QoG. Appendix B describes the definitions and sources of all variables used in this study.

### 3.2 Cross section dependence, Panel Unit Root tests and CS-ARDL

We have applied the Cross-sectional Dependence (CD) test developed by Pesaran et al., (2008) since our sample countries are integrated through several economic, social, cultural networks, and hence generating spillover effects. The null hypothesis of CD is the existence of cross-sectional independence among the sample countries, while the alternative hypothesis is the presence of cross-sectional dependence among the sample countries.

The equation of the test is expressed as follows:

$$CD = \left( \frac{TN(N-1)}{2} \right)^{1/2} \bar{\hat{P}}$$

where  $\bar{\hat{P}} = \left( \frac{2}{N(N-1)} \right) \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{P}_{ij}$  and  $\hat{P}_{ij}$  indicates the pair-wise correlation coefficient of the cross-sectional residuals obtained from the Augmented Dickey Fuller (ADF) regression.  $T$  and  $N$  indicate the time and cross-section dimensions, respectively. After obtaining

the results from the CD test, the Cross Sectional Augmented Dickey-Fuller known as CIPS has been applied to examine the order of integration. The CIPS approach is referred to as the second-generation panel unit root tests which are developed to account for the presence of cross-sectional dependency (Pesaran, 2007; Moon & Perron, 2004; Bai & Ng, 2004). The CIPS method can be applied through the following procedure.

$$\Delta Y_{it} = \alpha_i + \beta_i Y_{it-1} + \gamma_i \bar{Y}_{t-1} + \phi_i \Delta \bar{Y}_t + \varepsilon_{it} \dots\dots\dots (1)$$

Here,  $t=1, \dots, T$ ,  $i = 1, \dots, N$ , and  $\bar{Y}_t$  indicates the mean of the cross sections and is derived from  $\bar{Y}_t = N^{-1} \sum_{i=1}^N Y_{it}$ . The insertion of the mean value mitigates the contemporary correlation among  $Y_{it}$ . The null hypothesis of Eq. (1) is  $H_0: \beta_i = 0$  for all  $i$  and the alternative hypothesis is  $H_1: \beta_i < 0$  for some  $i$ . The Cross-sectionally augmented panel unit root (CIPS) test has been provided by Pesaran (2007) which is given as follows:

$$CIPS(N, T) = N^{-1} \sum_{i=1}^N t_i(N, T) \dots\dots\dots (2)$$

where,  $t_i(N, T)$  indicates the t-statistics for  $\beta_i$ .

The variables included in the study have a strong probability to be cross-sectionally dependent since in the era of globalization many countries are integrated through trade relations, financial integration, information communication technologies and diplomatic relations. Therefore, we apply the CS-ARDL estimation technique developed by [Chudik and Pesaran \(2015\)](#) to the variables under consideration. The CS-ARDL is an updated version of the pooled mean group (PMG) by [Pesaran et al., \(1999\)](#), and its framework includes the long run parameter, the short run parameter coupled with the error correction coefficient, and the cross sectional mean for each respective variable both in the short run and the long run. CS-ARDL has been shown to be an efficient model proven by monte-Carlo simulation. Based on a series of Monte Carlo simulations, study shows the robustness of the panel CS-ARDL estimates to endogeneity

problem. Therefore, the CS-ARDL can address the potential endogeneity, serial correlation and common correlation-biased problem. In addition, CS-ARDL provides long-run effect, or level relationship, is of great importance in economics. The concept of "long-run relations" is typically associated with the steady-state solution of a structural macroeconomic model. Often the same long-run relations can also be obtained from arbitrage conditions within and across markets. As a result, many long-run relationships in economics are free of particular model assumptions; examples being purchasing power parity, uncovered interest parity and the Fisher inflation parity.

In order to compute the effects of the unobserved common factors, this approach applies unit-specific ARDL specifications, which helps one to estimate the long-run effects indirectly. In the presence of the unobserved common factors, the CS-ARDL has been recommended to be efficient (Chudik et al., 2016). This approach is well known for addressing the cross-sectional dependency both in the short run and the long run. The estimators of the Mean group (MG) are based on the standard CS-ARDL assumption, therefore they are asymptotically unbiased as  $N \rightarrow \infty$  for both fixed  $T$  and  $T \rightarrow \infty$ . We estimate the three different versions of CS-ARDL to capture the probable cross-sectional bias independently in the short run, in the long run and together in the short run and long run.

Hence, the baseline regression equations for the CS-ARDL are given as following:

$$\begin{aligned} \Delta LGDPC_{it} = & \\ & \mu_i + \varphi_i(LGDPC_{it-1} - \beta_i X_{it-1} - \phi_{1i} \overline{LGDPC}_{t-1} - \phi_{2i} \bar{X}_{t-1}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta LGDPC_{it-j} + \\ & \sum_{j=0}^{q-1} \zeta_{ij} \Delta X_{it-j} + \eta_{1i} \Delta \overline{LGDPC}_t + \eta_{2i} \Delta \bar{X}_t + \varepsilon_{it} \dots \dots \dots \end{aligned} \quad (3)$$

where  $\Delta LGDPC_{it}$  is the dependent variable,  $X_{it}$  represents all independent variables during the long run,  $\overline{LGDPC}_{t-1}$  is the mean of the dependent variable for the long run,  $\bar{X}_{t-1}$  is the mean of

independent variables for long run,  $\Delta LGDPC_{it-j}$  is the dependent variable in the short run,  $\Delta X_{it-j}$  is the independent variables in the short run,  $\overline{\Delta LGDPC}_t$  is the mean of dependent variable during short run,  $\overline{\Delta X}_t$  is mean of the independent variables during the short run and  $\varepsilon_{it}$  is the error term. Note that  $j$  stands for the cross-sectional dimension  $j = 1, \dots, J$ , time  $t = 1, \dots, T$  and  $\beta_j$  represents the coefficients of the independent variables,  $\lambda_{ij}$  is the short run coefficient of the dependent variable,  $\zeta_{ij}$  are the short run coefficients of the independent variables and  $\eta_{1i}$  and  $\eta_{2i}$  represent the means of the dependent and the independent variables during the short run.

## 4. Results and Discussion

### 4.1 Descriptive analysis

Table 1 presents the descriptive statistics of our variables in the logarithmic form. The sample statistics show that the mean value and the standard deviation of GDP per capita ( $GDP$ ) are 8.752 and 1.340, respectively. The mean values of globalization index ( $GI$ ), economic globalization index ( $EGI$ ), political globalization index ( $PGI$ ) and social globalization index ( $SGI$ ) are 3.945, 4.054 and 3.751, accordingly, suggesting that the size of  $SGI$  is smaller than the other domains of globalization. Table 1 also shows that financial development ( $FD$ ) and labor force vary within a shrinking space, implying that they indicate almost a homogenous posture.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
$LGDPC$	4,032	8.752	1.340	5.241	11.625
$GI$	4,032	3.945	0.368	1.083	4.568
$EGI$	4,032	3.968	0.379	1.492	4.595
$PGI$	4,032	4.054	0.491	0.243	4.601
$SGI$	4,032	3.751	0.551	0.231	4.633
$FCF$	4,032	3.044	0.389	0.753	4.257
$LF$	4,022	15.149	1.770	10.588	20.506
$FD$	3,976	3.931	0.898	0.341	5.878
$QoG$	3,658	0.584	0.234	0.110	0.990

Notes:  $LGDPC$  is the log of GDP per capita,  $GI$  is the globalization index,  $EGI$  is the economic globalization index,  $PGI$  is the political globalization index,  $SGI$  is the social globalization index,  $QoG$  is the quality of governance,  $TO$



denotes trade openness, *ICT* represents information communication technology, *FCF* is the fixed capital formation, *LF* is the labor force, *FD* represents financial development and *QoG* stands for quality of governance (anti-Corruption activities, Law and Order and Bureaucracy Quality). The source for the governance data: <https://info.worldbank.org/governance/wgi/>. See also the sources in Appendix B.

#### 4.2 Cross Sectional Dependency and Order of Integration

Before analyzing our models, we seek to identify two important characteristics of the variables including cross-sectional dependency (CD) and order of integration. First, we apply the CD test, which is enormously important to address the problems associated with CD for a long panel time-series data in order to obtain unbiased estimators (Sadorsky, 2013). In order to explore the contemporaneous correlations across the countries, we employ the CD test developed by Pesaran et al., (2008). This test is conducted on the basis of the average pair-wise correlations under the OLS framework. The CD statistics are estimated from the residuals obtained from the individual sample country regressions in the panel. We further apply the CD test on the first-differenced form and the one-year lag form of the variables to justify whether CD should be addressed both in the short run and the long run in our framework. We believe the economic spillover effect might take place in the domestic economy even in the short run through the forces of globalization in this present era.

At the second stage, we apply the second generation (CIPS) panel unit-root test that considers the presence of CD. The prime objective of applying the CIPS test is to examine the order of integration of the variables to determine the best estimation technique to estimate and analyze our models.

Table 2: Cross Sectional Dependency Test and Panel Unit-Root Test

Variables	Over time Horizon		Short Run (1 <sup>st</sup> Differenced)		Long Run (One Year Lag)	
	CD	Obs (Corr)	CD	Obs (Corr)	CD	Obs (Corr)
<i>LGDP</i>	276.20 <sup>a</sup>	0.697	55.46 <sup>a</sup>	0.218	269.46 <sup>a</sup>	0.697

<i>LFCF</i>	11.92 <sup>a</sup>	0.816	19.82 <sup>a</sup>	0.157	12.30 <sup>a</sup>	0.336
<i>LLF</i>	236.79 <sup>a</sup>	0.817	27.65 <sup>a</sup>	0.284	27.65 <sup>a</sup>	0.284
<i>LGI</i>	404.861 <sup>a</sup>	0.861	55.35 <sup>a</sup>	0.184	401.49 <sup>a</sup>	0.864
<i>LEGI</i>	299.10 <sup>a</sup>	0.666	42.89 <sup>a</sup>	0.180	298.17 <sup>a</sup>	0.671
<i>LPGI</i>	323.20 <sup>a</sup>	0.696	52.27 <sup>a</sup>	0.202	319.56 <sup>a</sup>	0.696
<i>LSGLO</i>	350.740 <sup>a</sup>	0.773	46.27 <sup>a</sup>	0.157	348.02 <sup>a</sup>	0.778

Note: <sup>a, b, c</sup> denote significance at the 1 %, 5 % and 10 % levels, respectively. No CD is hypothesized under the null hypothesis.

A precondition for applying the CS-ARDL approach is the presence of the CD and an order of integration either I (1) or a mixed order of I (1) and I (0) but not more in the respective variables. We present the CD test statistics and the average cross-sectional correlations in Table 2. At first, we apply the CD on the variables over the time horizon (without having differenced and lags). Table 2 strongly affirms the presence of CD in all variables. The CD statistics are highest for the globalization index (*LGI*) where the average cross-country correlation is 0.861. The lowest CD statistic is recorded as 11.92 where the average cross-country correlation is 0.817 for the fixed capital formation. The fourth column of Table 2 highlights the results of the CD test in the first-differenced form of our variables. The fourth and fifth columns of Table 2 also confirm the presence of CD but at a lower extent than over the time horizon. Lastly, we apply CD on the lagged form of the variables. The last two columns (the sixth and seventh) of Table 2 report the results. We clearly observe the existence of CD and the high average cross-country correlation in all variables. Therefore, we come to a decision to address CD both in the short run and the long run in our model.

We present the results of the panel unit-root tests in Table 3. We apply the CIPS test suggested by [Pesaran \(2007\)](#). This table shows that *LGDPC* appears to be non-stationary in the level, both with trend and without trend, but becomes stationary after taking the first difference. Table 3 also shows that *LFCF*, *LGI*, *LPGI* and *LSGI* are stationary in the level. However, *LLF*,

*LEGI* and *LFD* are non-stationary in the level, but they are stationary after taking the first difference. Thus, the presence of CD and a mixed order of integration endorses the appropriateness of the CS-ARDL approach as the best tool to analyze our models.

Table 3: Panel Unit-Root Test under the Assumption of CD

Variables	CIPS (Level)	CIPS (1 <sup>st</sup> Diff)	CIPS (Level & Trend)	CIPS (Trend and 1 <sup>st</sup> Diff)
<i>LGDP</i>	-1.572	-5.831 <sup>a</sup>	-2.233	-6.456 <sup>a</sup>
<i>LFCF</i>	-2.884 <sup>a</sup>	-10.825 <sup>a</sup>	3.891	-7.183 <sup>a</sup>
<i>LLF</i>	0.985	-11.626 <sup>a</sup>	0.472	-11.302 <sup>a</sup>
<i>LGI</i>	-6.982 <sup>a</sup>	-26.097 <sup>a</sup>	-3.079 <sup>a</sup>	-25.374 <sup>a</sup>
<i>LEGI</i>	-1.820	-23.387 <sup>a</sup>	-0.857	-21.456 <sup>a</sup>
<i>LPGI</i>	-7.362 <sup>a</sup>	-30.248 <sup>a</sup>	-2.177 <sup>b</sup>	-28.190 <sup>a</sup>
<i>LSGI</i>	-5.172 <sup>a</sup>	-26.666 <sup>a</sup>	-3.867 <sup>a</sup>	-26.823 <sup>a</sup>
<i>LFD</i>	4.184	-21.068 <sup>a</sup>	1.570	-17.334 <sup>a</sup>

Note: <sup>a, b, c</sup> denotes the statistical significance at the 1 %, 5 % and 10 % levels, respectively.

#### 4.2 The economic growth–globalization nexus (*H1*)

The prior literature argues that globalization has a mixed effect on economic growth. We postulate that the relation between economic growth and globalization follows a non-monotonic shape (quadratic form or nonlinear). Table 4 reports three different models (M1, M2 and M3) that examine the economic growth and globalization relationship under different time horizons. We address CD both in the short and in the long run in model M1. Moreover, CD is addressed in the short run under model M2 and in the long run under model M3. However, we focus on the results obtained from M1 Table 4 as Table 2 affirms the presence of CD in both the short run and the long run. We also present the results from models M2 and M3 to highlight how the magnitude and the sign of the coefficients change due to the presence of CD.

Table 4: Model Estimation of the Economic Growth- Globalization Nexus

DV: <i>LGDP</i>	CD both in SR & LR		CD in SR	CD in LR
	M1	M2	M3	
Error Correction	-0.0952 <sup>a</sup> (-7.27)	-0.0761 <sup>a</sup> (-8.06)	-0.0321 <sup>a</sup> (-3.76)	
<b>Long Run</b>				
<i>LGI</i> <sub><i>t</i>-1</sub>	-0.4865 <sup>a</sup> (-8.37)	-0.3205 <sup>a</sup> (-3.56)	-0.6196 <sup>a</sup> (-7.44)	
<i>LGI</i> <sup>2</sup> <sub><i>t</i>-1</sub>	0.0623 <sup>a</sup> (8.13)	0.1007 <sup>a</sup> (8.94)	0.1580 <sup>a</sup> (11.44)	
<i>LFCF</i> <sub><i>t</i>-1</sub>	0.2714 <sup>a</sup> (18.51)	0.1713 <sup>a</sup> (10.39)	0.5199 <sup>a</sup> (15.20)	
<i>LLF</i> <sub><i>t</i>-1</sub>	0.1275 <sup>a</sup> (4.96)	0.7809 <sup>a</sup> (21.29)	0.4746 <sup>a</sup> (4.84)	
<b>Short Run</b>				
$\Delta$ <i>LGI</i>	0.1590 (0.20)	0.0391 (0.05)	-0.8929 (-1.10)	
$\Delta$ <i>LGI</i> <sup>2</sup>	-0.0224 (-0.22)	-0.0061 (-0.06)	0.1134 (1.11)	
$\Delta$ <i>LFCF</i>	0.1160 <sup>a</sup> (9.92)	0.1241 <sup>a</sup> (10.41)	0.1405 <sup>a</sup> (10.80)	
$\Delta$ <i>LLF</i>	0.0451 (0.31)	0.1584 (1.05)	-0.0178 (-0.12)	
Constant	0.3739 <sup>a</sup> (6.69)	-0.2685 <sup>a</sup> (-6.34)	-0.4190 <sup>a</sup> (-3.79)	
N	3910	3910	3910	

Note: <sup>a, b, c</sup> denotes significance at the 1 %, 5 % and 10 % levels, respectively. We apply the Chudik and Pesaran (2015) Cross-Sectionally augmented Autoregressive Distributive Lag (CS-ARDL) methodology under the condition of short-run heterogeneity and long-run homogeneity by solving the problem of cross-sectional dependence in the short-run and long-run (M1), in the short-run (M2), and the long-run (M3).

The results from Table 4 suggest that the coefficient of the error correction (EC) is negative and significant under all three models, confirming a long run relationship between *GDPC* and *GI* through a short-run economic adjustment process. More precisely, the coefficient implies that the short run speed of adjustment towards the long-run equilibrium is 9.52% per year, which is equivalent to 10.5 years.

The coefficients of *LGI*<sub>*t*-1</sub> and *LGI*<sup>2</sup><sub>*t*-1</sub> are negative and positive, respectively, and significant in the long run, implying that globalization exerts an initial negative impact on economic growth and then starts to have a positive influence after a threshold point, and suggesting a quadratic U-shaped relation for the overall sample. Countries initially fail to benefit

from globalization because of many political, economic and social impediments but over time they overcome those impediments. The initial negative impact of globalization can be explained by the argument forwarded by [Read \(2004\)](#), which asserts that the degree of the impact and the distributive effects of globalization depend on the readiness of any country to maximize the benefits of globalization. However, after a certain level of economic adjustment in the globalization process, globalization positively influences economic growth. Although many transitional economies initially failed to grasp the benefit of globalization, they have received over time a significant amount of worker remittances in exchange for migrant labor and technological diffusion over the recent years.

Furthermore, our findings coincide with that of [Stiglitz \(2002\)](#) which asserts that rigorous globalization may not be able to resolve all numerous social and economic problems among different countries. However, these economies have also received access to the international market to export their goods and services. As a consequence, many middle income and transitional economies have enjoyed a robust economic growth through utilizing the different instruments of globalization. For example, trade and financial integration, and large-scale trade liberation governed by the comparative advantage rule increase the intensity of international competition within the intra firms and between countries, also reinforced by the rules of WTO and technological advancement in recent years. These factors collectively have influenced gradually to the rising portion of the U- shape curve.

On the other hand, the short run analysis of the coefficients of  $\Delta LGI$  and  $\Delta LGI^2$  are positive and negative, respectively, but both are insignificant. We posit a possible explanation of this insignificant coefficients is that initially many countries fail to incorporate themselves in the process of globalization.

The positive and significant coefficient of fixed capital  $LFCF_{t-1}$  conveys a significant contribution of capital to growth. Additionally, purchases of capital equipment including plant, machinery and infrastructural growth like construction of roads, railways, investment in human capital including schools, offices, hospitals, private residential dwellings together with investment in commercial and industrial buildings, land improvements are conducive to economic growth. The coefficients of labor force  $LLF_{t-1}$  are positive and significant (Table 4). This finding suggests that the advancement of educational attainment by workers coupled with a good governance helps assimilate them to get absorbed in many MNCs and industries that were flourished by the wave of globalization.

We also recommend that the impact of globalization on economic growth should not be applied homogenously on all over the sample, thereby it should be interpreted by taking the country specific-heterogeneity into account for 112 countries.

#### 4.3 The economic growth-economic, political and social globalization nexus (H2)

In this section, we decompose our measure of  $GI$  into the economic, political and social subcategories and reassess those components' respective impacts on economic growth. The coefficients of the error correction ( $EC$ ) for the economic, political, social globalizations in Table 5 are -0.525, -0.402 and -0.495, respectively, implying that after any economic shock, the models adjust 5.25%, 4.02% and 4.95% per year towards the long run equilibrium.

Table 5: Economic Growth-economic, Political and Social Globalization Nexuses

	CD in LR & SR	CD in SR	CD in LR	CD in LR & SR	CD in SR	CD in LR	CD in LR & SR	CD in SR	CD in LR
	M1	M2	M3	M4	M5	M6	M7	M8	M9
Error Correction	-0.0525 <sup>a</sup> (-6.82)	-0.0697 <sup>a</sup> (-9.90)	-0.0176 <sup>a</sup> (-3.47)	-0.0402 <sup>a</sup> (-5.51)	-0.0005 (-0.24)	-0.0394 <sup>a</sup> (-5.67)	-0.0495 <sup>a</sup> (-5.93)	-0.0424 <sup>a</sup> (-7.02)	-0.0413 <sup>a</sup> (-6.10)
<i>Long Run</i>									

$LEGI_{t-1}$	-2.2672 <sup>a</sup> (-7.00)	1.5641 <sup>a</sup> (3.15)	0.7563 (0.93)						
$LEGI^2_{t-1}$	0.3373 <sup>a</sup> (7.57)	-0.1231 <sup>b</sup> (-1.97)	-0.0717 (-0.67)						
$LPGI_{t-1}$				-0.9022 <sup>a</sup> (-3.22)	0.0085 (0.02)	-1.0245 <sup>a</sup> (-3.63)			
$LPGI^2_{t-1}$				0.1256 <sup>a</sup> (3.12)	-0.1327 <sup>c</sup> (-1.68)	0.1549 <sup>a</sup> (3.88)			
$LSGI_{t-1}$							-0.2845 <sup>c</sup> (-1.66)	-0.4768 (-1.42)	0.1536 (0.52)
$LSGI^2_{t-1}$							0.1074 <sup>a</sup> (4.07)	0.1948 <sup>a</sup> (4.33)	0.0224 (0.49)
$LFCF_{t-1}$	0.3792 <sup>a</sup> (14.38)	0.3950 <sup>a</sup> (15.32)	0.3763 <sup>a</sup> (7.61)	0.5208 <sup>a</sup> (19.50)	1.0794 <sup>a</sup> (4.95)	0.5572 <sup>a</sup> (19.66)	0.5031 <sup>a</sup> (20.46)	0.6437 <sup>a</sup> (14.27)	0.5581 <sup>a</sup> (16.01)
$LFCF_{t-1}$	0.0503 (1.04)	0.5012 <sup>a</sup> (14.06)	1.6295 <sup>a</sup> (9.27)	-0.5033 <sup>a</sup> (-10.86)	6.9476 <sup>a</sup> (6.27)	-0.4051 <sup>a</sup> (-7.96)	-0.4143 <sup>a</sup> (-7.90)	0.5450 <sup>a</sup> (14.10)	-0.4395 <sup>a</sup> (-7.19)
<i>Short Run</i>									
$\Delta LEGI$	-4.9765 (-1.16)	-3.4922 (-1.26)	-3.2395 (-1.14)						
$\Delta LEGI^2$	0.5629 (1.19)	0.3979 (1.30)	0.3689 (1.18)						
$\Delta LPGI$				-0.8390 (-0.64)	-0.7148 (-0.54)	-1.5764 (-1.22)			
$\Delta LPGI^2$				0.0815 (0.54)	0.0669 (0.44)	0.1712 (1.14)			
$\Delta LSGI$							-0.5845 (-0.30)	0.2492 (0.14)	-0.1453 (-0.08)
$\Delta LSGI^2$							0.0775 (0.34)	-0.0332 (-0.16)	0.0207 (0.10)
$\Delta LFCF$	0.1385 <sup>a</sup> (10.14)	0.1179 <sup>a</sup> (9.83)	0.1306 <sup>a</sup> (10.68)	0.1202 <sup>a</sup> (9.97)	0.1357 <sup>a</sup> (10.33)	0.1392 <sup>a</sup> (10.21)	0.1176 <sup>a</sup> (9.93)	0.1195 <sup>a</sup> (9.68)	0.1392 <sup>a</sup> (10.50)
$\Delta LLF$	0.0030 (0.02)	-0.0247 (-0.17)	0.0866 (0.61)	-0.1176 (-0.87)	-0.0155 (-0.10)	-0.1656 (-1.08)	-0.1778 (-1.16)	-0.0384 (-0.25)	-0.1336 (-0.86)
Constant	0.0839 <sup>a</sup> (5.13)	-0.2731 <sup>a</sup> (-8.34)	-0.5454 <sup>a</sup> (-3.55)	-0.0397 <sup>a</sup> (-3.93)	-0.0711 (-0.33)	-0.0176 <sup>c</sup> (-1.80)	-0.1261 <sup>a</sup> (-5.92)	-0.0963 <sup>a</sup> (-5.54)	-0.1208 <sup>a</sup> (-5.61)
N	3910	3910	3910	3910	3910	3910	3910	3910	3910

Note: <sup>a, b, c</sup> denotes significance at the 1 %, 5 % and 10 % levels, respectively. We apply the Chudik and Pesaran (2015) Cross-Sectionally augmented Autoregressive Distributive Lag (CS-ARDL) methodology.

The coefficients for economic, political and social globalization variables are negative and significant, and their squared terms ( $LEGI^2$ ,  $LPGI^2$  &  $LSGI^2$ ) are also mostly positive and significant, indicating a U-shaped relation between the three dimensions of globalization and economic growth in the long run for the whole sample of the countries. This same finding is applicable for the short run as well. Moreover, the entire analysis has been conducted after

accounting for CD both in the LR & the SR. The economic globalization (*EG*) conforms to the falling portion of U in several ways. The initial phase of a U-shaped curve is attributable to the developing countries' inadequate preparedness to deal with the distributional consequences of globalization. However, the rising portion of the U-shaped curve can be explained by the fact that the middle-income economies (both the upper middle and the lower middle) have received substantial worker remittances, technological advancement, trade and financial integrations and access to foreign markets to export their goods and services due to the process of globalization in recent years. A considerable trade liberalization geared by the rules of WTO in 1994, coupled with the growing significance of comparative advantage, increases the intensity of international competition between the firms of the trading partners. Together, all these factors pertain to the rising phase of the U-shaped curve.

We highlight the diminishing phase of the U-shaped curve, as the initial phase of political globalization (*PG*) is counterproductive with economic growth due to several reasons. Among those factors are low institutional quality or poor governance, lack of democracy, political instability ([Barro 1997](#)), colonial background ([Acemoglu and Robinson, 2000](#)), geopolitical weight particularly for the Sub Saharan Africa and the majority of the Asian economies are worth mentioning. Countries with a poor governance induce the problems of lack of policy credibility, corruption, civil conflict and social fragmentation. For instance, some developing countries could not benefit from the Washington Consensus,<sup>3</sup> whereas the protectionism policy of high-income countries and differential treatments of multinational enterprises (MEs) depending on geopolitical bargaining power have negatively affected the integrity of these MEs. The political globalization-economic growth nexus in the increasing phase of the U-shaped curve

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<sup>3</sup>The Washington Consensus adheres to the concept of free market economy in the form of policy suggestions and was subsequently coined and suggested by the IMF, the World Bank, the EU and the US for the developing countries.



demonstrates a gradual adoption to the pro-market strategies by developing countries. This appropriation of a market-friendly approach materializes with the help of trade and financial liberalization, where the diplomatic relations, membership in international treaties, and organizations including the UN agencies, play a pivotal role in increasing the economic development of the developing countries.

We strengthen our argument by further explaining that the declining phase of the U shape appears as economic growth is being hindered by the initial process of social globalization (*SG*). At the beginning, the changes brought by social governance (*SG*) may be culturally conflicting for the recipient countries. For example, the tourism sector in many developing countries struggles in the early phase of *SG* to cope with their ethical and religious barriers. Developing countries often failed to grab the benefit of *SG* due to the lack of readiness or absorbing capacity. In addition, competitive pressures stemming from trade liberalization violates the social welfare standards, environmental standards and the worker protection legislation which are detrimental to economic growth.

However, the rising portion of the U-curve could be explained by the improvements in human rights which are acclaimed for the spread of liberal ideas (Rosenau, 2003). *SG* has elevated the ability of the civil society to be active across borders and promotes human rights. Internal human rights laws have been effective in protecting individuals and groups from vilifying actions by the states and their agents. Globalization is considered to have an effect on human rights in the form of economic, labor, cultural, civil, and political aspects (Sykes, 2003). For instance, the migration of large female workers to the Middle East from West Asia and South-East Asia has positively affected income growth, as migrated women earn higher wages compared to wages in their home countries (Arafat, 2013). Nevertheless, the undeniable impact

of the social media, which propagates through the development of Information and communications technology (ICT) particularly in the post 2000 era, has made an easy gateway for *SG* to have a favorable impact on economic growth. All these forces may have contributed to the rise in income in the process of social consequences of globalization.

#### *4.4 The economic growth- globalization nexus for different income groups (H2)*

Our decomposed analysis shows that globalization and economic growth follow a U-shaped relationship for the middle-income countries and a positive linear relation for high income countries (Table 5). The coefficients of the error correction (EC) term are negative and significant for both the middle income countries and the high-income countries. More specifically, the speeds of adjustment to the long-run equilibrium are 9.42%, 8.70% and 5.17% for the lower middle, upper middle and high-income countries, respectively, per year. Table 5 presents a comparative discussion among the three major sub-classes of our sample based on income differences regarding the impact of globalization on economic growth. We find that the globalization-growth relation follows a U-shape relationship for the middle-income countries, implying that after a certain level, globalization promotes economic growth but it declines initially. Interestingly, this finding is dissimilar with the finding for the high-income countries where globalization shares a positive linear relationship with growth.

We find that *GI* influencing GDP linearly in the long run for the high-income countries is compatible with the literature. Economic integration encourages trade, financial openness together with free flows of information and cultural convergence among countries (Li & Reuveny, 2003). The role of government policies, and the coordination of economic policies of governments and the efforts of international organizations are determined by the degree of openness to trade and finance.

Table 5: Economic Growth-Globalization: Regional Analysis

	Lower Middle Income			Upper			High		
	CD in LR & SR	CD in SR	CD in LR	CD in LR & SR	CD in SR	CD in LR	CD in LR & SR	CD in SR	CD in LR
Error Correction	-0.0942 <sup>a</sup>	-0.0724 <sup>a</sup>	-0.0868 <sup>a</sup>	-0.0870 <sup>a</sup>	-0.022 <sup>b</sup>	-0.0721 <sup>a</sup>	-0.0517 <sup>a</sup>	-0.0439 <sup>a</sup>	-0.0600 <sup>a</sup>
	(-6.27)	(-3.61)	(-4.01)	(-3.56)	(-2.52)	(-3.92)	(-3.65)	(-3.53)	(-4.02)
Long Run									
$LGI_{t-1}$	-0.0751	1.2459 <sup>a</sup>	-0.1388	-0.3103 <sup>a</sup>	8.8453 <sup>a</sup>	-0.4244 <sup>a</sup>	0.2510	1.3971 <sup>a</sup>	0.8705 <sup>a</sup>
	(-0.91)	(6.71)	(-1.54)	(-3.23)	(4.34)	(-3.24)	(0.69)	(4.86)	(3.88)
$LGI^2_{t-1}$	0.0431 <sup>a</sup>	-0.1121 <sup>a</sup>	0.1263 <sup>a</sup>	0.1643 <sup>a</sup>	-1.1591 <sup>a</sup>	0.2232 <sup>a</sup>	0.1730 <sup>a</sup>	0.1010 <sup>a</sup>	0.0734 <sup>a</sup>
	(3.27)	(-4.64)	(9.32)	(8.23)	(-4.26)	(10.69)	(3.81)	(2.64)	(3.12)
$LFCF_{t-1}$	0.3742 <sup>a</sup>	0.2586 <sup>a</sup>	0.3406 <sup>a</sup>	0.3486 <sup>a</sup>	1.1854 <sup>a</sup>	0.3421 <sup>a</sup>	0.2926 <sup>a</sup>	-0.1431 <sup>a</sup>	0.4151 <sup>a</sup>
	(12.45)	(10.47)	(14.93)	(11.35)	(7.14)	(8.48)	(6.56)	(-3.11)	(9.38)
$LFF_{t-1}$	0.3026 <sup>a</sup>	0.9038 <sup>a</sup>	1.1233 <sup>a</sup>	-0.0589	0.5429 <sup>a</sup>	-0.0311	0.7877 <sup>a</sup>	0.0759	0.4655 <sup>a</sup>
	(2.76)	(16.88)	(13.54)	(-0.81)	(5.75)	(-0.43)	(8.72)	(1.22)	(6.21)
Short Run									
$\Delta LGI$	-1.3061	-1.0505	-1.5248	-0.3238	-0.7135	-0.0521	1.9163	2.1128	0.7881
	(-1.28)	(-1.05)	(-1.42)	(-0.21)	(-0.50)	(-0.03)	(1.29)	(1.42)	(0.62)
$\Delta LGI^2$	0.1557	0.1220	0.1891	0.0505	0.0857	0.0131	-0.2326	-0.2541	-0.0909
	(1.22)	(0.97)	(1.40)	(0.25)	(0.47)	(0.06)	(-1.27)	(-1.38)	(-0.58)
$\Delta LFCF$	0.0473 <sup>a</sup>	0.0615 <sup>a</sup>	0.0607 <sup>a</sup>	0.1204 <sup>a</sup>	0.1251 <sup>a</sup>	0.1337 <sup>a</sup>	0.1626 <sup>a</sup>	0.1735 <sup>a</sup>	0.1879 <sup>a</sup>
	(2.95)	(3.49)	(3.23)	(6.21)	(5.71)	(6.14)	(8.04)	(8.49)	(7.95)
$\Delta LLF$	0.0142	0.0386	0.1527	0.0410	0.0516	0.0074	0.0279	-0.0213	0.0555
	(0.03)	(0.09)	(0.30)	(0.24)	(0.24)	(0.04)	(0.31)	(-0.24)	(0.54)
Cons	-1.070 <sup>a</sup>	-0.7511 <sup>a</sup>	-0.754 <sup>a</sup>	-0.221 <sup>a</sup>	-0.435 <sup>b</sup>	-0.0122	-0.306 <sup>a</sup>	0.075 <sup>a</sup>	-0.222 <sup>a</sup>
	(-6.02)	(-3.56)	(-3.86)	(-3.35)	(-2.50)	(-0.96)	(-3.48)	(3.88)	(-3.50)
N	1155	1155	1155	1190	1190	1190	1565	1565	1565

Note: <sup>a, b, and c</sup> denote significance at the 1 %, 5 % and 10 % levels, respectively. Standard errors are in parentheses.

We apply the Chudik and Pesaran (2015) Cross-Sectionally augmented Autoregressive Distributive Lag (CS-ARDL) methodology

In this regard, technology plays an instrumental role in increasing the intensity of people's interactions and negotiations, resulting in increased flows of information. For example, the MEs play a vital role in technology transfer and in the escalation of outsourcing. Moreover, the multifaceted aspect of globalization affects social integration through the elimination of social exclusion (Dreher, 2006; Boockmann & Dreher, 2003; Aramberri, 2009). Therefore, the overlapping information and communication remain as an example of success for other

countries. Growth comes as a consequence due to political and economic reforms followed by an elevated and growing degree of integration (Drake, 1998; Chang & Lee, 2010). Some studies emphasize that the ideological commitment of the parties in power influences the trade policy. For instance, the emerging issues like protectionism vs free trade was put forward by European integration and right wing (left wing) political parties opt for free trade (protectionism) policies (Dutt & Mitra, 2005; Marks et al., 2002). Partisan differences on trade policies within a country gradually converge with the increasing influence of globalization, particularly for the governments of democratic states (Vowles, 2008). Several empirical studies propose a linear relationship between *GI* and growth. For instance, economic growth and globalization index combining all of the three components are found to have unidirectional causal relationship for the 23 OECD countries during the period 1970-2006 (Chang & Lee, 2010).

Referring to a study of 14 OECD economies, there is a positive association between globalization and rising social spending (Bretschger & Hettich, 2001). Because of the mobility of capital across countries, taxes are levied more on relatively inelastic labor tax base than elastic capital tax base. This result adheres to the ‘efficiency hypothesis of globalization’. On the other hand, increased social expenditure supports the ‘compensation hypothesis of globalization’ which implies that governments will broaden welfare policies to insure citizens against higher economic risks associated with an increasing unemployment in the labor market.

#### *4.5. The economic growth- globalization nexus: Role of financial development (H3)*

Since we argue that the impact of globalization on economic growth is sensitive to the level of financial development, we split our sample into high *FD* and low *FD* countries. Table 7 reports the result. The error correction (EC) coefficients are negative and significant for both the high *FD* and low *FD* sample countries. We further observe that the countries with a low *FD* have

a higher rate of the speed of adjustment towards the long run equilibrium, compared to the high FD countries.

Table 7: Economic Growth- Globalization: Role of Financial Development

	High FD			Low FD		
	CD in LR & SR	CD in SR	CD in LR	CD in LR & SR	CD in SR	CD in LR
Error Correction	-0.0819 <sup>a</sup> (-6.24)	0.0009 (0.93)	-0.0576 <sup>a</sup> (-4.37)	-0.1169 <sup>a</sup> (-8.37)	-0.0643 <sup>a</sup> (-4.21)	-0.0707 <sup>a</sup> (-5.79)
<i>Long Run</i>						
$LGI_{t-1}$	0.8569 <sup>a</sup> (3.32)	1.2759 (0.30)	0.8032 <sup>a</sup> (2.92)	-0.7463 <sup>a</sup> (-6.68)	-0.2756 <sup>b</sup> (-2.42)	-0.3491 <sup>a</sup> (-4.05)
$LGI^2_{t-1}$	-0.0261 (-0.81)	0.7788 (0.85)	0.0474 (1.39)	0.0378 <sup>a</sup> (2.62)	0.2400 <sup>a</sup> (13.27)	0.1107 <sup>a</sup> (8.18)
$LFCF_{t-1}$	0.1628 <sup>a</sup> (5.14)	6.3800 (1.05)	0.3791 <sup>a</sup> (9.12)	0.3255 <sup>a</sup> (12.57)	0.0648 <sup>a</sup> (3.25)	0.3687 <sup>a</sup> (10.56)
$LLF_{t-1}$	0.2581 <sup>a</sup> (4.75)	-6.7744 (-1.05)	-0.4350 <sup>a</sup> (-5.60)	-0.4747 <sup>a</sup> (-8.54)	-0.1390 <sup>a</sup> (-5.99)	-0.0005 (-0.01)
<i>Short Run</i>						
$\Delta LGI$	0.4550 (0.44)	0.1291 (0.12)	-0.8654 (-1.07)	-0.4658 (-0.35)	0.2890 (0.23)	-0.1709 (-0.14)
$\Delta LGI^2$	-0.0559 (-0.44)	-0.0194 (-0.14)	0.1077 (1.08)	0.0554 (0.33)	-0.0307 (-0.19)	0.0237 (0.15)
$\Delta LFCF$	0.1374 <sup>a</sup> (8.37)	0.1490 <sup>a</sup> (8.89)	0.1630 <sup>a</sup> (8.08)	0.0847 <sup>a</sup> (5.99)	0.1120 <sup>a</sup> (6.75)	0.1113 <sup>a</sup> (6.42)
$\Delta LLF$	-0.0707 (-0.59)	-0.1934 <sup>c</sup> (-1.68)	-0.0369 (-0.24)	-0.0212 (-0.09)	-0.1086 (-0.47)	-0.0134 (-0.05)
Constant	0.1693 <sup>a</sup> (6.09)	0.0253 (0.83)	0.6687 <sup>a</sup> (4.87)	0.0370 (1.55)	0.5150 <sup>a</sup> (4.35)	-0.4927 <sup>a</sup> (-5.65)
N	1915	1915	1915	1995	1995	1995

Note: <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> denote significance at the 1 %, 5 % and 10 % levels, respectively. The standard errors are in parentheses. We apply the Chudik and Pesaran (2015) Cross-Sectionally augmented Autoregressive Distributive Lag (CS-ARDL) methodology

We note that globalization and economic growth are linearly associated for the high FD countries. Our finding is consistent with our stratified analysis for the high-income countries. This finding further coincides with our argument that developed financial markets can also magnify the benefits of globalization through the *FDI* channel, which could enhance savings and investment decisions and could play a role in transferring capital to its effective uses.

Particularly, the high FD countries have been enjoying the benefits of globalization process since the early 1970's. Referring to the cross country studies by [Edwards \(2001\)](#); [Quinn and Toyoda, \(2003\)](#); [Bekaert et al., \(2005\)](#), the advantages of capital account liberalization are restricted more for developed countries. Furthermore, countries with a greater degree of financial development are more likely to have a positive impact on economic growth resulting from equity market liberalization.

We further argue that the non-linear U-shape holds for the low FD countries. The declining portion of the U-shape is due to financial regulations including interest rate ceilings and reserve requirements obstructing the savings-investment decisions for the middle-income countries. On the other hand, the rising portion of the U-curve relates to financial liberalization through the deregulation of interest rates further which increases the supply of loanable funds and consequently leading to a more appropriate allocation of the funds ([McKinnon, 1973](#); [Shaw, 1973](#); [Calderon & Liu, 2003](#); [Luintel & Khan, 1999](#)).

#### *4.6 Globalization and Growth: Role of Governance (H4)*

Table 8 manifests the estimation results of the (H4) globalization – growth nexus across the high governance (HG) and low governance (LG) economies. The error correction (EC) coefficients are negative throughout, and the rate of speed of adjustment towards the long run equilibrium is higher in the LG (10.49%) than HG (4.24%) countries. The globalization –growth follows a U-shaped relation in the HG countries. We argue that with the process of globalization, countries with HG experience a declining trend in economic growth until a threshold level is attained, probably due to impediments in international trade, property rights structure, legal system, monetary system. The bureaucratic system cannot harmonize with the process of globalization and cannot realize the advantages or benefits of globalization along with its all

dimensions. In the absence of asymmetric information in the financial markets, free mobility of capital ensures efficient allocation of resources across the globe, provided that a threshold level of institutional quality is required (Stiglitz, 2000; Arestis et al., 2005; Wei, 2006).

Table 8: Economic Growth- Globalization: Role of Governance (H4)

	High Governance			Low Governance		
	CD in SR & LR	CD in SR	CD in LR	CD in SR & LR	CD in SR	CD in LR
Error Correction	-0.0424 <sup>a</sup> (-3.16)	-0.0855 <sup>a</sup> (-7.69)	-0.0011 (-0.14)	-0.1049 <sup>a</sup> (-5.90)	-0.0412 <sup>a</sup> (-6.15)	-0.0798 <sup>a</sup> (-6.28)
$LGI_{t-1}$	-4.6090 <sup>a</sup> (-3.22)	-1.5719 (-1.41)	-0.1099 (-0.04)	0.0146 (0.03)	-0.8878 (-0.71)	-1.1842 <sup>b</sup> (-2.03)
$LGI^2_{t-1}$	0.6854 <sup>a</sup> (3.89)	0.2611 <sup>c</sup> (1.94)	0.0713 (0.21)	-0.0267 (-0.38)	0.3032 <sup>c</sup> (1.83)	0.2144 <sup>a</sup> (2.67)
$LFCF_{t-1}$	0.5066 <sup>a</sup> (9.37)	0.1175 <sup>a</sup> (4.07)	0.9128 <sup>a</sup> (6.98)	0.3068 <sup>a</sup> (15.28)	0.6254 <sup>a</sup> (11.66)	0.3545 <sup>a</sup> (13.77)
$LLF_{t-1}$	-1.5556 <sup>a</sup> (-10.60)	0.1252 <sup>b</sup> (2.33)	0.8245 <sup>a</sup> (3.55)	-0.7510 <sup>a</sup> (-13.71)	0.3798 <sup>a</sup> (4.89)	-0.5058 <sup>a</sup> (-9.32)
SR						
$\Delta LGI$	-1.1686 (-0.52)	-3.6505 (-1.63)	-6.3666 <sup>a</sup> (-2.86)	0.1095 (0.10)	0.6725 (0.64)	-0.3150 (-0.28)
$\Delta LGI^2$	0.1395 (0.52)	0.4197 (1.58)	0.7507 <sup>a</sup> (2.87)	-0.0240 (-0.17)	-0.1002 (-0.75)	0.0364 (0.26)
$\Delta LFCF$	0.1651 <sup>a</sup> (9.40)	0.1520 <sup>a</sup> (9.07)	0.1817 <sup>a</sup> (9.02)	0.1208 <sup>a</sup> (8.61)	0.1031 <sup>a</sup> (6.99)	0.1090 <sup>a</sup> (6.89)
$\Delta LLF$	-0.1194 (-0.80)	0.1070 (0.84)	0.0431 (0.28)	-0.1666 (-0.84)	-0.1558 (-0.68)	-0.1866 (-0.80)
Cons	1.3328 <sup>a</sup> (3.19)	0.8176 <sup>a</sup> (8.05)	-0.0162 (-0.09)	-0.0976 <sup>a</sup> (-3.46)	-0.0229 <sup>b</sup> (-2.14)	0.1325 <sup>a</sup> (5.34)
N	1740	1740	1740	2170	2170	2170

Note: <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> denote significance at the 1%, 5 % and 10% levels, respectively. The standard errors are in parentheses. We apply the Chudik and Pesaran (2015) Cross-Sectionally augmented Autoregressive Distributive Lag (CS-ARDL) methodology

Table 8 also demonstrates that the low governance countries are unable to incorporate the benefits of globalization in their process of growth. We assert that the institutional framework of a country is a determining factor whether a national economy adapts with the forces of globalization or not (Simmons & Elkins, 2004). Particularly, developing countries with a weaker

governance suffer from the economic and financial policies based on the protectionism doctrine, along with the rent-seeking behavior with the outer world (Simmons, 1994; Alesina, et al., 1994; Leblang,1997). We also surmise that mis-governance can take various forms like curbing public policy transfer, policy diffusion, policy convergence, and institutional isomorphism, therefore can act as a hindrance for developing countries. Further, the involvement of domestic leaders in globalization affairs impaired the desired benefits from the process of globalization is in harmony with theories (Frieden, 1991; Rogowski, 1989).

To summarize, we have empirically tested the four hypotheses (Table 9). First, our finding appears to be consistent with the first hypothesis (H1) which states that economic growth and globalization follow a non-monotonic relation. Precisely, we have established a U-shaped relation based on the entire sample countries. Second, H2 asserts that the impact of globalization varies across the different income groups. Based on the prior literature, we postulate that the influences of globalization may vary due to a country's readiness to grab the benefits of globalization. We find economic growth and globalization follow a U-shaped relation for the middle-income countries, while it they follow a linear relation for the high-income countries. We have developed our third hypothesis (H3) contending that the impact of globalization on economic growth is sensitive to the level of financial development. Our analysis validates hypothesis (H3). Finally, our hypothesis (H4) establishes the role of governance in the globalization and economic growth linkage. Our findings affirm our argument that globalization is beneficial for economic development in countries with high level of governance, while the impact of globalization disappears in countries with a low governance.

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[Table 9: Summary of the Hypotheses](#)  
[Hypotheses](#)

[Results](#)

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“H1: (Economic, political and social) globalization and economic growth follow a non-monotonic (quadratic) relation.”	√
“H2: The role of globalization on economic growth is sensitive to the level of income.”	√
“H3: The impact of globalization on economic growth is sensitive to the level of financial development.”	√
“H4: The role of globalization in driving economic growth is sensitive to the level of governance”	√

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## 5. Robustness Check

### 5.1 Sufficient condition for quadratic relationship

Lind and Mehlum (2010) argue that the standard econometric framework is inappropriate for testing the composite null hypothesis that the left side of the interval is decreasing, whereas the right side of the interval is increasing, or vice versa. The incorporation of the quadratic term as an independent variable in the standard regression satisfies only the necessary but not the sufficient condition (Lind and Mehlum, 2010). As previously mentioned, the estimation of the Panel-ARDL framework that takes the quadratic form of globalization fulfils the necessary condition for the existence of a U-shaped or an inverted U-shaped relationship. Therefore, to fulfill the sufficient condition, we apply the U-test approach suggested by Lind-Mehlum (2010).

To accomplish this task, we estimate the following model:

$$LGDPC_{it} = \alpha GI_{it} + \beta GI_{it}^2 + \gamma LC_{it} + \varepsilon_{it} \dots \dots \dots t=1 \dots T \text{ and } i=1 \dots n \dots \dots \quad (5)$$

where  $LGDPC_{it}$  is the explained or dependent variable (GDP per capita),  $GI$  is the main explanatory variable (globalization),  $C_{it}$  is a vector of control variables with the respective parameters  $\gamma$ , and  $\varepsilon_{it}$  is the error term. Equation (5) assumes only one extreme point as the

requirement for the U shape to be negatively sloped at the beginning and positively sloped at the end of a reasonably chosen interval of GI [ $GI_{min}$ ,  $GI_{max}$ ].

A U-shaped curve could be estimated by conducting a joint hypothesis test as follows:

Null hypothesis is  $H_0: (\alpha + \beta GI_{min} \leq 0) \cup (\alpha + \beta GI_{max} > 0)$

and the alternative hypothesis for an inverted U-shape is

$$H_1: (\alpha + \beta GI_{min} > 0) \cap (\alpha + \beta GI_{max} < 0)$$

where  $GI_{min}$  and  $GI_{max}$  represent the minimum and maximum values of globalization. If the null hypothesis is not rejected, this confirms the existence of the linear relation. Otherwise, the alternative hypothesis of an inverted U-shape holds.

Table 10 clearly demonstrates that the lower bound slope of globalization is negative, while the upper bound slope is positive for the overall sample countries, the lower middle and the upper middle-income countries. The coefficients of the lower bound and upper bound slopes of globalizations are insignificant for the high-income countries, indicating no quadratic relationship exists between globalization and economic growth. The findings from the U-test are consistent with the findings from the CS-ARDL approach.

Table 10: Economic Growth and Globalization: The U-Shape Test

	Whole Sample		Lower Middle Income		Upper Middle Income		High Income	
Slope	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Interval	1.083	4.568	1.083	4.568	1.084	4.579	1.083	4.568
Slope	-7.392 <sup>a</sup>	5.944 <sup>a</sup>	-4.093 <sup>a</sup>	2.922 <sup>a</sup>	-2.581 <sup>a</sup>	2.355 <sup>a</sup>	1.864	2.157
T-value	-28.892	70.045	-10.751	17.379	-10.230	19.784	0.481	0.277
P-Value	0.000	0.000	0.000	0.000	0.000	0.000	0.873	0.531
Overall presence of a U Shape								
T-Values	28.89 <sup>a</sup>		10.7 <sup>a</sup>		10.23 <sup>a</sup>		0.28	
Turning Point	3.015		3.116		2.905		4.063	

<sup>a, b, c</sup> represent significance at the 1%, 5%, and 10% levels, respectively. The U-shape test is the Lind-Mehlum (2010) test.

## 5.2 Addressing Potential Endogeneity

Since we incorporated several macro-series in our model, which may create an endogeneity or a reverse causality problem, we re-estimate our main models by applying the dynamic two-step system Generalized Methods of Moments (GMM) approach under the collapse option. We report our findings in Table 11. The robustness check afforded by the dynamic panel-data estimation, two-step system GMM under the collapse option confirms the consistency of the results with those of provided by the CS-ARDL approach. We can infer that the problem of endogeneity is well captured by the CS-ARDL approach as verified by the GMM approach.

Table 11: Economic Growth and Globalization: Dynamic GMM Estimation

Variables	LGDP	LGDP	LGDP	LGDP
LGDP	0.967*** (0.0193)	0.968*** (0.033)	0.960*** (0.0252)	0.940*** (0.035)
GI	-0.139* (0.0755)			
GI <sup>2</sup>	0.0313*** (0.0092)			
EGI		-0.201 (0.160)		
EGI <sup>2</sup>		0.0381** (0.0148)		
PGI			-0.191 (0.141)	
PGI <sup>2</sup>			0.0395* (0.0219)	
SGI				-0.212* (0.127)
SGI <sup>2</sup>				0.0370* (0.0192)
LFCF	0.140*** (0.035)	0.103*** (0.0341)	0.204*** (0.0614)	0.154** (0.0617)
LLF	-0.0040 (0.0053)	0.0112 (0.0100)	-0.00886 (0.0112)	0.0218* (0.0129)
Observations	3,911	3,911	3,911	3,911
Number of country	112	112	112	112

## 6. Conclusion

In this study, we examine that the globalization–growth nexus where the social and political dimensions of globalization have been accommodated, in addition to the traditional measure of economic globalization across a large sample of middle and high-income economies. Using the framework of the neo-classical growth theory, our study incorporates a sufficiently large sample of 116 countries, categorized during the period 1980-2015, by applying the CS-ARDL and controlling for cross-sectional dependency both in the LR & SR. We surmise cross-sectional dependency among our samples as we explore different dimensions through which the economic growth globalization nexus continues to share interdependencies. We validate the robustness of our findings with the standard econometric CD tests.

We have obtained a quadratic U-shaped relation between globalization (including economic, political, and social domains) and economic growth for the overall sample of countries, which implies a room for improvement in economic growth by pursuing globalization. We observe a U-shape non-linear relation after decomposing the globalization index into three different dimensions. We further observe this relation when dividing the countries into different income groups. We notice that the U-shape continues to hold for the middle-income countries, while a positive linear relationship holds for the high-income countries.

Finally, we split our sample on the basis of the intensity of financial development (FD) and reach the conclusion that countries with the higher FD exhibits a linear relationship between globalization and economic growth. Conversely, the growth-globalization nexus exhibits a U-shaped pattern for the countries with the lower FD. We finally claim a positive growth-globalization nexus for the high governance countries and an insignificant effect for this nexus for the low governance countries.

The empirical findings of our study provide several important policy implications. The monotonic linear relation between financial development and globalization for the high FD countries implies that the financial market should be strengthened by prompting credit and stock markets in several ways in the low FD countries to exploit the benefits of globalization.

The low governance countries should enhance their institutional quality. Particularly, a well-defined and protected property rights structure, an unbiased bureaucratic system, a more stable monetary system and a firmly established rule of law could be policy implications for the low governance countries. In a nutshell, the LG countries should strive to function as truly democratic states with a higher degree of accountability and transparency to grasp the long term benefits of international integration.

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## Appendix A. List of Countries

Lower Middle Income	Upper Middle Income	High Income
Armenia	Albania	Australia
Bangladesh	Algeria	Austria
Bolivia	Argentina	Bahamas
Cambodia	Belarus	Bahrain
Cameroon	Belize	Barbados
Congo, Democratic Republic	Botswana	Belgium
Cote d'Ivoire	Brazil	Brunei
Egypt	Bulgaria	Canada
El Salvador	China	Chile
Ghana	Colombia	Cyprus (1975-)
Guatemala	Costa Rica	Czech Republic
Honduras	Croatia	Denmark
India	Ecuador	Finland
Indonesia	Fiji	France (1963-)
Jordan	Gabon	Germany
Kenya	Guyana	Greece
Kyrgyzstan	Iran	Hungary
Lesotho	Jamaica	Iceland
Mauritania	Kazakhstan	Ireland
Mongolia	Lebanon	Israel
Morocco	Macedonia	Italy
Nicaragua	Malaysia (1966-)	Japan
Nigeria	Mauritius	Korea, South
Pakistan (1971-)	Mexico	Kuwait

Papua New Guinea	Namibia	Latvia
Philippines	Panama	Lithuania
Sri Lanka	Paraguay	Luxembourg
Sudan	Peru	Malta
Tunisia	Romania	Netherlands
Ukraine	South Africa	New Zealand
Vietnam	Suriname	Norway
Yemen	Thailand	Oman
Zambia	Turkey	Poland
	Venezuela	Portugal
		Saudi Arabia
		Singapore
		Slovakia
		Slovenia
		Spain
		Sweden
		Switzerland
		Trinidad and Tobago
		United Kingdom
		United States
		Uruguay

Note: Countries are classified according to the World Development Indicator's classification

## Appendix B: Variable, Definition and Source

Variable	Definition	Source
GDP per capita (LGDP)	GDP per capita is gross domestic product divided by midyear population. Data are in constant 2010 U.S. dollars. We transformed the data by taking natural logarithm	World Development Indicator, 2017
<i>Globalizations measures</i>		
Globalizations Index (LGI)	Overall globalization index consists of economic, social and political globalizations. The index of the overall globalization has been collected from the KOF index of globalization ( <a href="#">Dreher and Axel, 2006</a> ).	World Bank 2016, UNCTAD 2016, and IMF 2016.
Economic globalization (LEGI)	The data for economic globalization includes many factors, such as trade, foreign direct investment, stocks, portfolio investment, and income payments to foreign nationals, which are normalized with GDP. Economic globalization also includes several restrictions hidden import barriers, mean tariff rate, taxes on international trade (percent of current revenue), and capital account restrictions.	World Bank 2016, UNCTAD 2016, and IMF 2016.
Social globalization index (LSGI)	The data on social globalization include personal contacts (telephone traffic, transfers measured as a percent of GDP, international tourism, foreign population percent of total population, and international letters measured by per capita), data on information flows (internet users per 100 people, television per 100 people, trade in newspapers measured by percent of GDP), and data on cultural proximity (number of McDonald's restaurants per 100,000 people and number of Ikeas per 100,000 people).	World Bank 2016, UNCTAD 2016, and IMF 2016.

Political globalization index (LPGI)		The data on political globalization include the number of embassies in the country, membership in international organizations, participation in UN Security Council missions, and international treaties.	World Bank 2016, UNCTAD 2016, and IMF 2016.
Financial Development (FD)		We follow the three most conventional measures of financial development, including the amount of domestic credit disbursement to private sector, money supply (M2), and market capitalization used by other researchers ( <a href="#">Arestit and Demetriades, 1997</a> ; <a href="#">Luintel and Khan, 1999</a> ; <a href="#">Odhiambo, 2009</a> ).	World Development Indicator
Gross Capital Formation (FCF)	Fixed	Gross fixed capital formation (FCF) includes land improvements, plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.	World Development Indicator
Labor (LF)	Force	Labor force (LF) comprises people ages 15 and older who supply labor for the production of goods and services during a specified period. It includes people who are currently employed and people who are unemployed but seeking work as well as first-time job-seekers.	International Labour Organization, ILOSTAT database and World Bank population estimates. Labor data retrieved in November 2017.
Quality of Governance (QoG)	of	The quality of governance (QoG) consists of three indicators: corruption, law and order, and bureaucracy quality ( <a href="#">Charronet al., 2010</a> ). Institutional quality would be defined as impartial government institutions, implying that when public officials who execute policies do not take anything about the citizen/case into consideration that has not already been stipulated in the policy or the law ( <a href="#">Teorellet al., 2015</a> ). Therefore, this category includes variables' core features of QOG (bureaucratic quality, corruption), as well as measures that are broader (rule of law). The mean value of the ICRG variables Corruption, Law and Order and Bureaucracy Quality scaled 0–1. Here, 1 is the highest value, which indicates the perfect institutional quality without any flaws, whereas 0 is the minimum score, which represents the worst institution.	Internal Country Risks Guide, 2017